Reviewer’s report

Title: Visual categorisation of the Arch Index: a simplified measure of foot posture in older people

Version: 1 Date: 9 November 2011

Reviewer: Ravindra Goonetilleke

Reviewer’s report:

An interesting approach is proposed.

Major Compulsory Revisions

Some changes are needed to make the ideas clearer as there are many vague procedures and statements. These include:

1. Resizing and how it was performed. Is it the same scale in both directions? Visually, to me, Figure 4 appears to have some awkward scaling; they do not look like real feet. It appears that resizing was not the same in the x- and y-directions possibly because the scaling was different. This will give rise an error in the calculation of AI. The mathematics of the procedure and the comparison of the AI values of the two images should be given and shown in a table.

2. Was AI calculated on the resized image or on the original footprint. I would like to see the differences in magnitude of AI for the two cases to illustrate that they do give the same value. Sample images of the two case should also be shown.

3. What do the authors mean when they say, “To ensure that examiners using the technique focused on the midfoot contour of the footprint,…”. Why only midfoot?

4. Please make the following easier to read. “There were significant differences in mean AI across the AI categories documented by examiner 1 in session 1 (F2 = 85.6, p<0.001), examiner 1 in session 2 (F2 = 62.7, p<0.001), examiner 2 in session 1 (F2 = 80.9, p<0.001) and examiner 2 in session 2 (F2 = 74.3, p<0.001). All Bonferroni post-hoc tests across AI categories were significant at the p<0.001 level.” What did you compare in this? Is it the AI of what each examiner categorizes? If so, what is the purpose of the test?

Other changes:

1. Please report the misclassifications of false alarms or misses and discuss why each type occurs. This may give some insight into the possible reasons for the mismatches.

2. The authors claim that the tool can be used in a clinical setting to quickly assess the arch. How can one perform the necessary scaling to compare against the tool without proper equipment?

3. Please include a more acceptable reliability measure, such as ICC:

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.